

**REMARKS**

This Application has been carefully reviewed in light of the Office Action mailed August 9, 2007. Claims 1-12 are pending in this application and are rejected. For at least the reasons discussed below, Applicant respectfully requests reconsideration and favorable action in this case.

**Section 102 Rejections**

The Examiner rejects Claims 1, 2, 6, 7, 11, and 12 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. U.S. Publication No. 2004/0156597 issued to Kaneko (“*Kaneko*”).

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987); MPEP § 2131. In addition, “[t]he identical invention must be shown in as complete detail as is contained in the . . . claims” and “[t]he elements must be arranged as required by the claim.” *Richardson v. Suzuki Motor Co.*, 9 USPQ 2d 1913, 1920 (Fed. Cir. 1989); *In re Bond*, 15 USPQ 2d 1566 (Fed. Cir. 1990); MPEP § 2131 (*emphasis added*).

Claim 1 of the present application, as amended, recites the following limitations:

An apparatus for transmitting light comprising:  
a first substrate having a first surface including at least one first optically active area;  
a second substrate having a second surface positioned in opposing spaced apart relationship from said first surface, where said second surface contains at least one second optically active area opposing said at least one first optically active area, where said second substrate is supported substantially by said first substrate;  
a polymer layer disposed between said first and second substrates; and  
a waveguide disposed within said polymer layer between said first and second optically active areas on said first and second surfaces, where said waveguide comprises a polymer core and a cladding for transmitting light therebetween.

Claim 1 is not anticipated by *Kaneko* at because *Kaneko* does not disclose each and every one of these limitations. For example, *Kaneko* does not disclose “a first substrate

having a first surface including at least one first optically active area.” In the previous Office Action, the Examiner indicated that this first substrate was disclosed by *Kaneko*’s semiconductor chip 20. Applicants refuted that position in their previous Amendment, and the Examiner now asserts that this “first substrate” is optical fiber 220 of *Kaneko* and that the end surface of the core 222 of this optical fiber is the claimed “first surface.” However, Applicants respectfully submit that an optical fiber is not reasonably construed as being a “substrate.” M.P.E.P. § 2111 states that “[t]he Patent and Trademark Office (“PTO”) determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction “in light of the specification as it would be interpreted by one of ordinary skill in the art.” *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). Applicants assert that an optical fiber cannot reasonably be construed to be a “substrate” as that term is used in the specification of the present application.

Furthermore, in an attempt to resolve any ambiguity, Applicants have amended Claim 1 to recite that “said second substrate is supported substantially by said first substrate.” Applicants respectfully submit that the optical fiber of *Kaneko* is not a “substrate” and certainly does not substantially support what the Office Action asserts is the claimed “second substrate” – i.e., element 10 of *Kaneko*. As shown in Figure 18, element 10 is substantially supported by semiconductor chip 20 (and the elements supporting chip 20). Optical fiber 220 does not substantially support element 10, it is only mechanism to create an optical connection to element 10.

In addition, *Kaneko* does not disclose “a second substrate having a second surface positioned in opposing spaced apart relationship from said first surface, where said second surface contains at least one second optically active area opposing said at least one first optically active area.” For a teaching of this limitation, the Office Action points to optical element 10 as being the second substrate with a second surface and points to optical part 12 as being the claimed optically active area. However, optical part 12 is separate from and attached to the surface of optical element 10. Optical part 12 is not *contained* within a surface of optical element 10, as is required to meet the above-quoted limitation of Claim 1.

Moreover, *Kaneko* also does not disclose “a waveguide disposed within said polymer

layer between said first and second optically active areas on said first and second surfaces, where said waveguide comprises a polymer core and a cladding for transmitting light therebetween.” The Office Action asserts that connecting part 240 of *Kaneko* is the claimed waveguide; however, connecting part 240 does not include a cladding. As argued in the Applicants’ previous Amendment, *Kaneko* discloses that connecting part 240 is constructed to be similar to the core 222 of the optical fiber. Therefore, while it might correspond to the claimed “polymer core” of the waveguide, it does not include a cladding. In fact, it is the underfill material 40 that acts as the cladding for connecting part 240 (see Paragraph 225); however, material 40 cannot be the recited cladding of the claimed waveguide since the Office Action asserts that material 40 is the claimed “polymer layer.” These elements are distinct and the claim requires that the waveguide, which includes a core and a cladding, be *disposed within* the polymer layer. Therefore, there is no disclosure of the claimed waveguide having a cladding.

For at least these reasons, Applicants respectfully request allowance of Claim 1, as well as Claims 2-12, which depend from Claim 1.

### **Section 103 Rejections**

The Examiner rejects Claims 3-5 and 8-10 under 35 U.S.C. § 103(a) as being unpatentable over *Kaneko*.

Each of Claims 3-5 and 8-10 depends from Claim 1, which is shown above to be in condition for allowance. In addition, these dependent claims include additional limitations that are not disclosed, taught or suggested by *Kaneko*.

For example, canceled Claim 4 recites that the first substrate is an optical circuit board. Dependent Claim 4 has been rewritten in independent form as Claim 33. Regarding Claim 4, the Office Action summarily states that “it would have been obvious . . . to provide the interconnection of *Kaneko* between any known structures comprising one or more optically active area for the purposes of providing an inexpensive connection structure as taught by *Kaneko*.” Applicants fail to see how *Kaneko* or the prior art in any way teaches or suggests how optical fiber 220 could be replaced by an optical circuit board (since Claim 4, now Claim 33, require that the first substrate, which the Office Action argues is the optical

fiber, is an optical circuit board). In fact, this would render the device in *Kaneko* inoperable and destroy the very function (providing an inexpensive connection structure between an optical element and an optical fiber) that the Office Action asserts as being the support for an obviousness modification. For at least this additional reason, Applicants respectfully request allowance of Claim 33.

**New Claims**

As indicated above, Applicants have rewritten dependent Claim 4 in independent form as Claim 33. Claim 33 is allowable for the reasons discussed above. Furthermore, Applicants have also added Claims 34-43, which include limitations similar to Claims 2-3 and 5-12. These claims are at least allowable as depending from an allowable independent claim. Favorable action is respectfully requested.

**CONCLUSION**

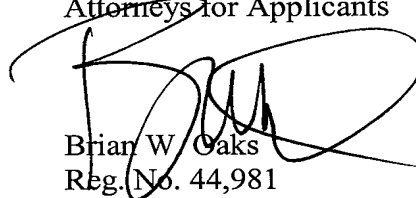
Applicants have made an earnest attempt to place this case in condition for allowance. For at least the foregoing reasons, Applicants respectfully request full allowance of all the pending claims.

If the Examiner feels that a telephone conference would advance prosecution of this Application in any manner, the Examiner is invited to contact Brian W. Oaks, Attorney for Applicants, at the Examiner's convenience at (214) 953-6986.

Although Applicants believe no fees are due, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

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